

PTO/SB/08A (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Complete if Known

Application Number	10/057,548
Filing Date	01-23-2002
First Named Inventor	Wellinghoff
Art Unit	1756
Examiner Name	Sadula
Attorney Docket Number	SwRI-2835-08

Sheet 1 of 5

U. S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
<i>JS</i>		US- 5,808,108	09-15-98	Chappelow, et al.	
<i>JS</i>		US- 5,624,976	04-29-1997	Klee	
<i>JS</i>		US- 4,914,221	04-03-1990	Winkler, et al.	
<i>JS</i>		US- 2004/0199004	10-07-2004	Wellinghoff, et al.	
<i>JS</i>		US- 2002/0036285 A1	03-28-2002	Prechtl, et al.	
<i>JS</i>		US- 6,699,405 B2	03-02-2004	Prechtl, et al.	
<i>JS</i>		US- 6,204,302	03-20-2001	Rawls, et al.	
<i>JS</i>		US- 5,563,230	10-08-1996	Hsu	
<i>JS</i>		US- 2004/0144954 A1	07-29-2004	Wellinghoff	
<i>JS</i>		US- 6,090,308	07-18-2000	Coates	
<i>JS</i>		US- 6,073,294	12-17-1991	Shannon	
<i>JS</i>		US- 5,202,053	04-13-1993	Shannon	
<i>JS</i>		US- 4,201,856	05-06-1980	Jackson Jr.	
<i>JS</i>		US- 2003/0055280 A1	03-20-2003	Wellinghoff	
<i>JS</i>		US- 5,654,471	08-05-1997	Zahn	
		US-			
		US-			
		US-			
		US-			

Previously considered
PL
-PL
PL
PL

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	†
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				

Examiner Signature	<i>Janet R</i>	Date Considered	3/2/05
--------------------	----------------	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



PTO/SB/088 (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known			
		Application Number	10/057,548		
		Filing Date	01-23-2002		
		First Named Inventor	Wellinghoff		
		Art Unit	1756		
		Examiner Name	Sadula		
Sheet	2	of	5	Attorney Docket Number	SwRI-2835-08

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
JS		CHOI, Rheological studies on sterically stabilized model dispersions of uniform colloidal spheres. II. Steady-shear viscosity, J. Colloid Interface Science., September 1986, pp. 101-113, Vol. 113(1), Academic Press, Inc.	
JS		CONDON, Reduction of composite contraction stress through non-bonded microfiller particles, Dental Materials, July 1998, pp. 256-260, Vol. 14.	
JS		HELLWIG, Influence of an incremental application technique on the polymerization of two light-activated dental composite filling materials, Dtsch. Zahnarztl Z., 1991, pp. 270-273, Vol. 46.	
JS		HIKMET, Anisotropic polymerization shrinkage behavior of liquid-crystalline diacrylates, Polymer, 1992, pp. 89-95, Vol. 33(1), Butterworth-Heinemann Ltd.	
JS		NORLING ET AL, Polymerizable nematic liquid crystal monomers for reduced shrinkage restorative resins, Proc. 17th Southern Biomed. Eng. Conf., 1998, p. 120.	
JS		LIU, Constant-volume polymerization of composites by addition of ammonia-modified montmorillonite, American Journal of Dentistry, April 1990, pp. 44-50, Vol. 3(2).	
JS		MILLICH, Elements of light-cured epoxy based dental polymer systems, J. Dent. Res., April 1998, pp. 603-608, Vol. 77(4).	
JS		RAWLS ET AL, Low Shrinkage resins from liquid crystal diacrylate monomers, ACS Polymer Preprints, September 1997, pp. 167-168, Vol. 38(2).	
JS		STANSBURY ET AL, Cyclopolymerizable Monomers for use in dental resin composites, J. Dent. Res., March 1990, pp. 844-848, Vol. 69(3).	
JS		UNO ET AL, Marginal adaptation of a restorative resin polymerized at reduced rate, Scand. J. Dent. Res., 1991, pp. 440-444, Vol. 99(5).	

Examiner Signature		Date Considered	3/2/05
--------------------	--	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



PTO/SB/088 (08-03)
Approved for use through 07/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known			
		Application Number	10/057,548		
		Filing Date	01-23-2002		
		First Named Inventor	Wellinghoff		
		Art Unit	1756		
		Examiner Name	Sadula		
Sheet	3	of	5	Attorney Docket Number	SwRI-2835-08

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
JS		HOLMBERG, Ester Synthesis with Dicyclohexycarbodiimide Improved by Acid Catalysts, Acta Chemica Scandinavica, 1979, pp. 410-412, Vol. B 33.	
JS		NAKAMURA, Characterization of Epitaxially Grown ZnS : Mn Films on a GaAs(100) Substrate prepared by the Hot-wall Epitaxy Technique, J. Mater. Chem., 1991, pp. 357-359, Vol. 1(3).	
JS		SCHULTZ, Polymerization and Viscoelastic Behavior of Networks from a Dual-Curing, Liquid Crystalline Monomer, J. Polym. Phys., 1999, pp. 1183-1190, Vol. 37, John Wiley & Sons, Inc.	
JS		GRIFFIN, Mesogenic Polymers. III. Thermal Properties and Synthesis of Three Homologous Series of Thermotropic Liquid Crystalline "Backbone" Polyesters, Journal of Polymer Science: Polymer Physics Edition, 1981, pp. 951-969, Vol. 19, John Wiley & Sons, Inc.	
JS		HUTCHINS, Aqueous Polar Aprotic Solvents. Efficient Sources of Nucleophilic Oxygen, J. Org. Chem. 1983, pp. 1360-1362, Vol. 48, The American Chemical Society.	
JS		KORNBLUM, Displacement of the Nitro Group of Substituted Nitrobenzenes - a Synthetically Useful Process, J. Org. Chem., 1976, pp. 1560-1564, Vol. 41, The American Chemical Society.	
JS		CLARK, X-Ray Scattering Study of Smectic Ordering in a Silica Aerogel, Physical Review Letters, November 22, 1993, pp. 3505-3508, Vol. 71, No. 21, The American Chemical Society.	
JS		BROER, In-Situ photopolymerization of oriented liquid-crystalline acrylates, 4 Influence of a lateral methyl substituent on monomer and oriented polymer network properties of a mesogenic diacrylate, Makromol. Chem. 1989, pp. 3201-3215, Vol. 190, Huthig & Wepf Verlag Basel, Heidelberg, New York.	
JS		BARCLAY, Liquid Crystalline and Rigid-rod Networks, Prog. Polym. Sci., 1993, pp. 899-945, Vol. 18(5), Pergamon Press Ltd.	
JS		Liquid Crystalline Polymers to Mining Applications, Encyclopedia of Polymer Science and Engineering, 1987, pp. 1-61, Vol. 9, John Wiley & Sons, New York.	

Examiner Signature		Date Considered	3/2/05
--------------------	--	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Missing
Pg 1



PTO/SB/08B (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known			
		Application Number	10/057,548		
		Filing Date	01-23-2002		
		First Named Inventor	Wellinghoff		
		Art Unit	1756		
		Examiner Name	Sadula		
Sheet	4	of	5	Attorney Docket Number	SwRI-2835-08

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		MEEK, Inertness of Tetrachlorofulvenes in the Diels-Alder Reaction, J. Org. Chem., January 9, 1958, pp. 1708-1710, Vol. 22 (12), The American Chemical Society.	
JS		SUZUKI ET AL, Preparation of poly(dimethylsiloxane) macromonomers by the initiator method: 2. Polymerization mechanism, Polymer, 1989, pp. 333-337, Vol. 30(2), Butterworth	
JS		KOCHAN ET AL, Solid Freeform Manufacturing - Assessments and Improvements at the Entire Process Chain, Proceedings of the Seventh International Conference on Rapid Prototyping, March 31-April 3, 1997, pp. 203-214, 94RA021.	
JS		NORLING ET AL, Cure shrinkage of experimental LC monomer based composite resins, Abstract, American Association for Dental Research meeting, 2001, Chicago, IL.	
JS		MOGRI ET AL, Thermomechanical of liquid crystalline monomer in dental composites, Abstract, American Association for Dental Research meeting, 2001, Chicago, IL.	
JS		DOWELL ET AL, The Effect of Silanation on Polymerization and Dynamic Mechanical Behavior of a homogenous nanofilled resin, Abstract, American Association for Dental Research meeting, 2001, Chicago, IL.	
JS		LOGAN ET AL, Effect of Silanation on Mechanical Properties of Homogeneous Nanofilled resins, Abstract, American Association for Dental Research meeting, 2001, Chicago, IL.	
JS		NORLING ET AL, Synthesis of a new low shrinkage liquid crystal monomer, Abstract, American Association for Dental Research meeting, 2000, Washington, D.C.	
JS		FURMAN ET AL, A Radiopaque Zirconia Microfiller for Translucent Composite Restoratives, Abstract, American Association for Dental Research meeting, 2000, Washington, D.C.	
		GENG, Targeted Drug Release by a Novel Polymeric Device Based on EVA (Ethylene Vinyl Acetate) For Periodontal Condition, (ABSTRACT).	

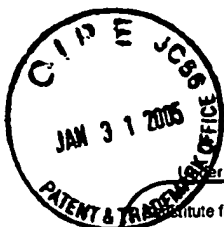
Examiner Signature		Date Considered	3/2/05
--------------------	--	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.



PTO/SB/088 (08-03)
Approved for use through 07/31/2008. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449/PTO

Complete if Known	
Application Number	10/057,548
Filing Date	01-23-2002
First Named Inventor	Wellinghoff
Art Unit	1756
Examiner Name	Sadula
Attorney Docket Number	SwRI-2835-08

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Use as many sheets as necessary)

Sheet 5 of 5

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
JS		BOLAND ET AL, Cell Survival and Cytokine Expression by Dental Cells Treated with a Liquid Crystal Resin Monomer, J. Dent. Res., 2001, pp. 151 (Abstract 928), Vol. 80.	
		WANG, Rheological Properties of Dental Composites, (ABSTRACT)	
JS		WELLINGHOFF ET AL, Reduced Shrinkage dimethacrylate liquid crystal resins, J. Den. Res. 1997, pp. 279 (Abstract 2127), Vol. 76.	
JS		NORLING ET AL, Cure shrinkage of composite resins and an experimental LC monomer, J. Dent. Res., 1999, pp. 233 (Abstract 1020), Vol. 78.	
		PANYAYONG, Effects of Corn-Starched & Primer Additions on Mechanical Properties of Provisional Dental Resin, (ABSTRACT).	

Examiner Signature		Date Considered	3/2/05
--------------------	--	-----------------	--------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.